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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/485,097	03/08/2000	BENNY MARTIN MATHIESEN	12875.10USWO	1469

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EXAMINER

GOFF II, JOHN L

ART UNIT	PAPER NUMBER
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1733

DATE MAILED: 04/29/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/485,097

Applicant(s)

MATHIESEN, BENNY MARTIN

Examiner

John L. Goff

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 February 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 March 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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DETAILED ACTION

1. This action is in response to Amendment E received on 2/19/03. The previous 35 U.S.C. 112 rejections have been overcome.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Drawings

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: 7 and 8 in Figure 1 and 19 in Figure 1. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

4. The substitute specification filed 2/19/03 has not been entered because it does not conform to 37 CFR 1.125(b) because: The substitute specification lacks a marked up copy.
5. 35 U.S.C. 112, first paragraph, requires the specification to be written in "full, clear, concise, and exact terms." The specification is replete with terms which are not clear, concise and exact. The specification should be revised carefully in order to comply with 35 U.S.C. 112,

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first paragraph. Examples of some unclear, inexact or verbose terms used in the specification are: See the reasons set forth in paper no. 10 and paper no. 20.

Claim Objections

6. Claim 11 is objected to because of the following informalities: In claim 11, line 13 delete "culling" and insert therein - - cooling - -. Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. Claims 2-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. Claims 2-4 and 8 recite the limitation "the/said composite material". There is insufficient antecedent basis for this limitation in the claim. It is suggested to delete "composite material" and insert therein - - laminated foil and woven material - -.

Claim Rejections - 35 USC § 103

9. Claims 1-10 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sumitomo (JP 52-6782) in view of Sandt (U.S. Patent 2,833,686) and Smuck et al. (DE 4202920).

Sumitomo discloses that it is known to melt-adhere a PTFE film to a (woven), e.g. glass fabric, in a heat and pressure lamination process. Sumitomo teaches one process wherein the laminating conditions are 390 °C and 5 to 10 Kg/cm² (0.5 to 1 N/mm²). (English Translation

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Abstract and, in the translation provided: Page 2, last line thru page 3, line 5 and page 3, lines 12-17). This reference is seen to correspond to/be consistent with applicant's admission as to what constitutes prior art/the state of the art (Page 1, lines 11-13 of applicants specification).

Sandt discloses that in the bonding of PTFE films to ANY heat resistant material substrate in a heat and pressure bonding process, it is PREFERRED to cool the laminate so formed under pressure, i.e. by maintaining the laminating pressure, to minimize unequal contraction, i.e. shrinking, of the film (column 1, lines 15-17 and 32-41 and column 2, lines 4-72 and column 3, lines 1-4 and column 5, lines 35-40), such that it would have been obvious to one of ordinary skill in this art to employ this PREFERABLE (i.e. beneficial) cooling under pressure step/technique in conjunction with the process of Sumitomo to minimize shrinking of the PTFE.

As to a continuous process, Smuck et al. discloses a laminating apparatus composed of a heated roller pair/couple and a cooled/cooling roller pair/couple, which couples act successively (and in the order stated) on superposed plies of substrate material to be bonded. (Figs. 3-4, English Translation Abstract and, in the translation provided: Page 5, lines 8-13 and page 12, line 19-21 and page 13, lines 12-14). One of ordinary skill in the art at the time the invention was made would have readily appreciated performing the laminating process taught by Sumitomo as modified by Sandt using the laminating apparatus suggested by Smuck et al. as only the expected results would be achieved, i.e. continuous lamination.

As to the cooling conditions, it is noted Sandt teaches cooling under pressure to below 280 °C such that cooling to room temperature would be encompassed by Sumitomo as modified by Sandt. It is also noted Sandt teaches cooling the laminate under pressure to minimize shrinking of the PTFE, and in view of this teaching one of ordinary skill in the art would have

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readily appreciated maintaining the cooling under pressure to a temperature wherein visual shrinking of the PTFE is minimized. Furthermore, the cooling conditions are dependent upon many variables including the thickness of the laminate, and Sumitomo is not limited to a particular thickness such that one of ordinary skill in the art at the time the invention was made would have readily appreciated determining optimal cooling conditions based upon the specifics of the laminate such as the thickness without requiring anything other than ordinary skill and routine experimentation. Further regarding article-by-process claims 9-10, N.B. MPEP 706.03(e).

Regarding claim 14, absent any unexpected results it would have been obvious to one of ordinary skill in the art at the time the invention was made to perform the heating and cooling under the same pressure conditions.

10. Claims 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smuck et al.

Smuck et al. discloses a laminating apparatus composed of a heated roller pair/couple and a cooled/cooling roller pair/couple, which couples act successively (and in the order stated) on superposed plies of substrate material to be bonded. (Figs. 3-4, English Translation Abstract and, in the translation provided: Page 5, lines 8-13 and page 12, line 19-21 and page 13, lines 12-14). All of the essential structural and constructional limitations of these claims are seen to be satisfied by this reference, with the following being additionally advanced: (a) Smuck et al. fairly and clearly provide (N.B. page 5, lines 8-13 of the translation) for CONTROL of both the pressure and heat (or cooling) applied by their two (i.e. heated and cooled/cooling) roller pairs or couples such that it would have been obvious to one of ordinary skill in this art to effect the

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heating and cooling regimen set forth in the claims, this controlled apparatus being seen to be capable of performing this heating and cooling regimen. (b) As to the specific laminating conditions, these conditions are dependent upon many variables including the thickness of the laminate, and Smuck et al. is not limited to a particular thickness such that one of ordinary skill in the art at the time the invention was made would have readily appreciated determining optimal laminating conditions based upon the specifics of the laminate such as the thickness without requiring anything other than ordinary skill and routine experimentation.

Response to Arguments

11. Applicant's arguments with respect to claims 1-14 have been considered but are moot in view of the new ground(s) of rejection. Applicant argues Sandt and Sumitomo do not teach the claimed cooling conditions in claims 1-10 and 14. It is noted Sandt teaches cooling under pressure to below 280 °C such that cooling to room temperature would be encompassed by Sumitomo as modified by Sandt. It is also noted Sandt teaches cooling the laminate under pressure to minimize shrinking of the PTFE, and in view of this teaching one of ordinary skill in the art would have readily appreciated maintaining the cooling under pressure to a temperature wherein visual shrinking of the PTFE is minimized. Furthermore, the cooling conditions are dependent upon many variables including the thickness of the laminate, and Sumitomo is not limited to a particular thickness such that one of ordinary skill in the art at the time the invention was made would have readily appreciated determining optimal cooling conditions based upon the specifics of the laminate such as the thickness without requiring anything other than ordinary skill and routine experimentation. Applicant further argues Smuck et al. do not teach the

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claimed laminating conditions in claims 11-13. It is noted Smuck et al. suggest typical laminating conditions (Page 13, lines 7-8 and 12-14 of translation). However, these conditions are only exemplary as the specific conditions are dependent upon many variables including the thickness of the laminate, and Smuck et al. is not limited to a particular thickness such that one of ordinary skill in the art at the time the invention was made would have readily appreciated determining optimal laminating conditions based upon the specifics of the laminate such as the thickness without requiring anything other than ordinary skill and routine experimentation.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **John L. Goff** whose telephone number is **703-305-7481**. The examiner can normally be reached on M-Th (8 - 5) and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Ball can be reached on 703-308-2058. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



John L. Goff
April 23, 2003



Michael W. Ball
Supervisory Patent Examiner
Technology Center 1700